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NOTES ON THE PSEUDOSCORPIONIDA.

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Mr. H. G. Hubbard has lately sent me a large number of interesting Pseudoscorpions from various parts of the United States. Several new species are contained in the collection, which also affords new localities for many known forms. I hope sometime in the future to make a somewhat elaborate work on this interesting group of Arachnida, but I am aware that there are many new forms yet to be discovered in the arid and in the mountainous regions of the west. Therefore I would only give at present a revision of all the forms known to me.

The Pseudoscorpions form a very strongly circumscribed group. Of the general structure of the scorpions, they differ from them in several ways. They have no post-abdomen; there is no longitudinal furrow on the cephalothorax, while transverse ones are frequently present; there is no median pair of eyes; there are no pectines, which perhaps may find their homologue in the spinning organs; and there are some minor differences in the mandibles, legs, etc.

Prof. Luigi Balzan has (in Ann. Soc. Ent. France, 1891) given a new and elaborate classification of the Pseudoscorpions based principally on the South American forms. The principal new point introduced by him, is the value he assigns to the serrula of the mandibles. This, I think, he has much over-estimated; and would put more faith in the sutures of the cephalothorax and in the longitudinal division of the abdominal scutæ. The two main divisions do not differ much in their composition; but *Olpium* and *Atemnus*, which according to Balzan are placed with the Cheliferidæ, I would place in the Obisiidæ. Moreover I have tried to bring the classification into the style of that usually adopted by the best entomologists.

I would consider these Arachnids as representing an order — Pseudoscorpionida; tabulating the genera and other groups as follows:

- | | | |
|----|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | { | Cephalothorax with a transverse median suture; abdominal scutæ divided; mandibles small, with a stylet, the serrula attached above to the mobile finger; cephalothorax rounded in front; clavate hairs frequently present..... (CHELIFERIDÆ) 2 |
| 1 | | No transverse suture; abdominal scutæ entire; no clavate hairs; cephalothorax usually truncate in front; mandibles usually large; the stylet often lacking, and the serrula usually detached from the mobile finger (OBISIIDÆ) 4 |
| | { | Four eyes; cephalothorax narrowed quite suddenly in front of eyes; no trochantins to the anterior pairs of legs... (GARYPINÆ)... Garypus. |
| 2 | | Two or no eyes; cephalothorax evenly rounded in front; trochantins to anterior legs..... (CHELIFERINÆ) 3 |
| | { | Femur of palpus not pedicellate, gradually and slightly enlarged from base to tip; palpi very long and slender; two distinct eyes (except cave-form) Chelifer. |
| 3 | | Femur of palpus distinctly pedicellate, suddenly enlarged near base; palpi short and stout; eyes usually wanting Chelanops. |
| | { | Mandibles with a stylet; mandibles small, cephalothorax rounded in front; the serrula attached above (OLPINÆ) 5 |
| 4 | | Stylet often absent; mandibles large, serrula detached above; cephalothorax truncate in front (OBISIINÆ) 6 |
| | { | Four distinct eyes..... Olpium. |
| 5 | | Two or no eyes..... Atemnus. |
| | { | Mandibles with a stylet (IDEOBISINI) 7 |
| 6 | | No stylet present..... 8 |
| | { | Four eyes Ideobisium. |
| 7 | | Two eyes Ideoroncus. |
| | { | Tibia of palpus chalice-like (CHTHONINI) 10 |
| 8 | | Tibia normal (OBISINI) 9 |
| | { | Four eyes; (except cave forms); palpi short and stout..... Obisium. |
| 9 | | No eyes; palpi very long and slender..... Blothrus. |
| | { | Four eyes; (except cave forms); palpi long..... Chthonius. |
| 10 | | Two eyes; palpi shorter..... Lechytiæ. |

Family CHELIFERIDÆ.

Sub-family CHELIFERINÆ.

Chelifer Geoff. Our species may be separated by the following key:

- | | | |
|---|---|---------------------------------------------------------------------------------------------------------------------|
| 1 | { | No eyes, cave form, tibia swollen on the inner side..... mirabilis. |
| | | Two distinct eyes 2 |
| 2 | { | Tibia a little convex on inner side, fingers a little shorter than hand, western species scabrisculus. |
| | | Tibia not convex on inner side, fingers as long as hand..... 3 |

- | | | |
|---|------------------------------------------------------------------|--------------------|
| 3 | { Hand much darker than the other part of the palpus..... | muricatus. |
| | { Palpi unicolorous..... | 4 |
| | { Tibia longer than cephalothorax plus mandibles, on outer side | |
| | at base distinctly concave..... | floridanus. |
| 4 | { Tibia not longer than cephalothorax plus mandibles, outer side | |
| | not concave..... | 5 |
| | { Body red-brown; hand quite thick; larger granules on the | |
| | cephalothorax..... | cancroides. |
| 5 | { Body pale yellowish; hand more slender; no larger granules | |
| | on the cephalothorax..... | biseriatum. |

Chelifer cancroides Linn.—Faun. Suec.

This common species probably occurs all over the United States. I have it from Ithaca, N. Y.; Sea Cliff, L. I.; Washington, D. C.; Ohio (C. M. Weed); Ft. Collins, Colo. (Baker); Missouri (G. Van Ingen); Grosse Isle, Detroit River, (Hubbard); Lake Tahoe, Calif., (Hubbard); and Brazos Co., Texas.

Chelifer biseriatum, sp. nov.

Length, 2.2 mm. Pale brownish, palpi and anterior part of cephalothorax darker, a black spot at base of cephalothorax; abdomen with two series of brown spots. Cephalothorax as usual; sutures not very distinct, the anterior one curved forward, the posterior one nearly straight; eyes not prominent; no larger granules in either sex; palpi slender; trochanters as usual; femur longer than cephalothorax, gradually enlarged from base to tip; tibia shorter, no thicker and pedicellate, enlarged from near base to tip; hand shorter than tibia, more than twice as long as broad, tapering to the fingers, which are as long as the hand and much curved. Hard parts granulate and with many clavate hairs.

Many adult ♀ and ♂, the former with egg-bunches, beaten from palmetto-fans; Lake Poinsett, Florida, (H. G. Hubbard). Differs from *C. cancroides* in having no larger granules, in the more slender hand, more thickly clothed with clavate hairs, and in the pale color and markings.

Chelifer floridanus Bks.—Can. Entom., Aug., 1891.

Southern Florida, (E. A. Schwarz).

Chelifer muricatus Say.—Comp. Writings, Leconte Ed.

This easily recognized species tho' not common anywhere, appears to be quite widely distributed in the eastern United States. I have it from Ithaca, N. Y.; Sea Cliff, L. I.; Fredricksburg, Va., (Richardson); Salineville, Ohio, (A. D. MacGillivray); Bee Spring, Ky., (Hubbard); St. Lucie, Fla., and Sand Point, Fla., (Hubbard); Citrus Co., Fla., (C. M. Weed); and Punta Gorda, Fla., (Mrs. A. T. Slosson).

Chelifer scabrisculus *Simon*.—Ann. Soc. Ent. Fr., 1878.

Ch. degeneratus BALZAN, Ann. Soc. Ent. Fr., 1891.

Described from Southern California; I have it from S. Calif. one specimen (Cooper Curtice); Lake Tahoe, Calif., one specimen (Hubbard); Hood's River, Oreg., one specimen (Hubbard); and two specimens under stones, Utah Lake, Utah, (Hubbard), are reddish and have slightly longer fingers, but are hardly different.

Chelifer mirabilis, sp. nov.

Length, 2.6 mm. Cephalothorax and palpi red-brown; abdomen and legs brownish. Cephalothorax rounded, and slightly narrowed near anterior margin; no eyes; sutures distinct; surface finely granulate, no larger granules. Abdomen quite broad, about twice as long as the cephalothorax. Palpi slender; trochanter pedicellate, tubercled above near tip; femur slightly longer than cephalothorax, gradually enlarged from base to near tip, inner margin straight, outer slightly convex; tibia three-fourths as long, and slightly broader than femur, quite long pedicellate, outer margin slightly and evenly convex; inner margin convex at base, then nearly straight; hand about as long as tibia, slightly convex on outer margin, quite strongly and evenly on the inner margin, tapering to the fingers, which are about as long as the hand and quite strongly curved. Short clavate hairs on whole of palpi except fingers; similar ones on rest of body.

Three specimens, Indian Cave, Barren Co., Ky., June, (H. G. Hubbard); two specimens, Cave at Pennington Gap, Va., (H. G. Hubbard). A very peculiar species, particularly on account of the form of the tibia of the palpus, which is quite unlike that of our other species, but somewhat like the European *C. latreillii*.

Chelanops *Nicolet*.

Tömösvary in 1882 (*Pseudosc. faun. Hungar.*) divided this genus into *Lamprochernes* (those with long and simple hairs on the palpi) and *Trachychernes* (those with short, thick hairs). Nearly all of our forms belong in the latter group. The species from the United States I would arrange in the following way:

1	{ Hairs on the palpi very long and simple, abdomen long and of equal width throughout. (<i>Lamprochernes</i>)	oblongus, grossus.
	{ Hairs on the palpi short and thick often clavate, abdomen much the widest in the middle. (<i>Trachychernes</i>)	2
2	{ Hand with a projection on inner side	dentatus.
	{ Hand without any projection	3
3	{ Fingers as long or nearly as long as hand	4
	{ Fingers much shorter than hand	11
4	{ Hairs not distinctly clavate	5
	{ Hairs distinctly clavate.	8

	{ Inner margin of hand not greatly swollen at base	7
5	{ Inner margin of hand very much swollen at base, so that the hand is nearly as broad as long.....	6
6	{ Palpi greenish	latimanus.
	{ Palpi nearly black	virginica.
7	{ Fingers a little longer than hand	tristis.
	{ Fingers a little shorter than hand.....	morosus.
8	{ Inner margin of hand greatly swollen at base	10
	{ Inner margin of hand but weakly swollen at base.....	9
9	{ Palpi pale yellowish.....	pallidus, affinis.
	{ Palpi, dark red-brown.....	sanborni, dorsalis, pallipes.
10	{ Florida species	tumidus.
	{ California species	validus.
11	{ Two distinct eyes, hairs clavate	texanus.
	{ No eyes, hairs not clavate	acuminatus, floridæ, latus.

Chelanops oblongus Say.—Comp. Writings, Leconte Ed.

Chelanops alius LEIDY, Proc. Phil. Acad. Sci., 1877.

Probably in all the eastern United States; I have it from Ithaca, N. Y.; Washington, D. C.; Brazos Co., Texas; Citrus Co., Florida, (C. M. Weed); Sand Point, Fla., (Hubbard); Retreat, N. C., (Hubbard); Fredricksburg, Va., (Richardson); Detroit, Mich., (Hubbard).

Chelanops grossus Bks.—Can. Entom., March, 1893.

Quite common in Colorado (Dr. C. F. Baker).

Chelanops texanus Bks.

Chelifer texanus BANKS, Can. Entom., Aug. 1891.

Tho' this species has distinct eyes I place it here on the form of the femur. Brazos Co., Texas.

Chelanops acuminatus Simon.

Chelifer acuminatus SIMON, Ann. Soc. Ent. Fr., 1878.

California; Olympia, Wash. State, (T. Kincaid).

Chelanops floridæ Balzan.

Chernes floridæ BALZAN, Ann. Soc. Ent. Fr., 1891.

Three specimens from Punta Gorda, Fla., (Mrs. Slosson); very close to *C. latus*, but the fingers are shorter, and the tibia more swollen on inner side, and the body more slender.

Chelanops latus Bks.—Can. Entom., March, 1893.

Runnymede, Fla.; Palatka, Fla., (Hubbard).

Chelanops dentatus, sp. nov.

Length, 2 mm. Cephalothorax and palpi reddish-brown, abdomen brownish; legs pale. Cephalothorax rounded in front, no eyes or eye-spots, mandibles small; abdomen broad, depressed, scutæ divided; palpi short and stout, the trochanter slightly swollen behind, convex in front; the femur shorter than the cephalothorax, pedicellate, about of even width throughout; tibia about as long as femur, a little broader, pedicellate, moderately convex on outer margin, quite strongly swollen on inner margin; claw large, as long as femur plus trochanter, nearly twice as broad as femur, broadest at base and tapering to the fingers, which are as long as the hand and curved; on the inner margin of the hand is a large tooth-like process projecting outward and pointed in front. Body and appendages finely granulate, and with strongly clavate hairs, the usual simple ones on the fingers.

One specimen of this curious species without locality (Hubbard); but probably from Florida. The only similar species is *Ch. armiger* Balzan from Venezuela, which has two projections, one on each side of the hand.

Chelanops latimanus, sp. nov.

Length, 3 mm. Pale greenish, cephalothorax tinged with brownish, two series of brown spots above on the abdomen. Cephalothorax narrowed and rounded in front, two large white eye-spots; abdomen depressed, moderately broad, twice as long as cephalothorax; palpi short and stout, trochanters much swollen above, convex in front; femur much shorter than cephalothorax, short pedicellate, broadest near base, and two and one-half times as long as broad; tibia as long as, but little broader than femur, pedicellate, but little convex on either side; claw about as long as cephalothorax, very broad at base, fully twice as broad as femur, the basal angles but little rounded, then tapering to the fingers, which are stout, but little shorter than the hand, and curved. Hard parts finely granulate, and furnished with short, thick, but not clavate hairs.

One specimen, Punta Gorda, Fla., (Mrs. A. T. Slosson). Readily distinguished by its greenish color, and by the very broad, almost angulate hand; it is bluish when alive.

Chelanops virginica, sp. nov.

Length, 1.6 mm. Cephalothorax, abdominal scutæ and palpi, except fingers which are reddish, very dark brown; the hand almost shining black above; legs brownish. Cephalothorax with eye-spots and suture indistinct; palpi short and stout; femur much shorter than cephalothorax, slightly tapering to tip; tibia about as long as femur and a little broader, pedicellate, quite strongly swollen at base on inner side, then nearly straight; claw a little longer than cephalothorax, hand very broad, slightly rounded on outer side, very strongly swollen on inner side, fingers stout, curved, and but little shorter than the hand. Hard parts granulate, with short, thick, but not clavate, hairs. Abdomen short, broad and depressed.

Two specimens, Fredricksburg, Va., (W. D. Richardson).

Chelanops tristis Bks.—Can. Entom., Aug., 1891.

Only known to me from Long Island, N. Y. It lives under stones between tide-marks.

Chelanops morosus, sp. nov.

Length, 2 mm. Cephalothorax and palpi dark red-brown, abdomen brown, legs pale brownish. Cephalothorax with indistinct eye-spots, sutures distinct; abdomen broad; palpi large and stout; trochanter globose above, rounded behind and convex in front; femur shorter than cephalothorax, pedicellate, nearly cylindrical; tibia about as long as femur, slightly broader, quite long pedicellate, suddenly and strongly swollen on inner side near base, beyond concave, outer margin evenly convex; claw large, longer than the cephalothorax plus mandibles, but little rounded on the outer side, strongly and evenly on the inner side; fingers stout, curved and barely shorter than the hand. Hard parts with short thick hairs, not distinctly clavate.

Two specimens, Isle Royale, Lake Superior, (H. G. Hubbard).

Chelanops tumidus, sp. nov.

Length, 1.5 mm. Cephalothorax and palpi pale brownish yellow, abdominal scutæ brownish, legs pale. Cephalothorax rounded in front, sutures distinct, no eye-spots; abdomen moderately narrow, twice as long as cephalothorax, scutæ broadly divided; palpi short and stout; trochanter globose above and behind, convex in front; femur nearly as long as cephalothorax, pedicellate, broadest near base, slightly tapering to the tip; tibia but little shorter and a little broader than femur, pedicellate, outer margin evenly convex, inner margin quite strongly convex near base, beyond tapering; claw longer than cephalothorax, hand short and very broad and rounded at base, outer margin but little convex, inner strongly and suddenly swollen, then tapering to the fingers, which are plainly longer than the hand, and curved. Hard parts finely granulate and furnished with short clavate hairs.

Several specimens from under logs on the sea-beach, Indian River Inlet, Florida, April, 1880, (H. G. Hubbard).

Chelanops validus, sp. nov.

Length, 2 mm. Cephalothorax dark brown, palpi dark red-brown, abdominal scutæ brown, legs brownish. Cephalothorax with distinct sutures, and two faint eye-spots; abdomen one and one-half times as long as cephalothorax, scutæ well divided; palpi large; trochanter globose above and behind, convex in front; femur slightly shorter than the cephalothorax, pedicellate, very broad; tibia shorter than femur and plainly broader, pedicellate, evenly convex on outer side, inner margin much more strongly convex near base, concave beyond; claw as long as cephalothorax plus mandibles, very large, strongly and evenly convex on each side of hand, tapering to the stout fingers, which are about as long as hand, and curved. Hard parts finely granulate, and provided with short clavate hairs.

Several specimens, under bark; Lake Tahoe, Calif., July, (Hubbard). Differs from *Ch. tumidus* in larger size, broader body, darker color, more evenly convex hand and shorter fingers.

Chelanops pallipes Bks.—Can. Entom., March, 1893.

California.

Chelanops sanborni Hagen.*Chernes sanborni* HAGEN, Record Am. Ent., 1868.

Known to me from Ithaca, N. Y.; Poughkeepsie, N. Y., (G. Van Ingen); Cambridge, Mass., (Hubbard).

Chelanops dorsalis, sp. nov.

Length, 2 mm. Cephalothorax and scutæ brown, palpi pale red-brown, legs brownish. Cephalothorax moderately narrow, sutures distinct, no eye-spots; palpi moderate; trochanter as usual; femur shorter than the cephalothorax, pedicellate, broadest near base, concave on inner margin near tip; tibia a little shorter and slightly broader than the femur, pedicellate, evenly convex on outer side, more strongly on inner side near base, beyond concave; claw moderate, as long as cephalothorax plus mandibles, not much convex on outer side, quite strongly on inner side at base, tapering to the fingers, which are nearly as long as the hand, and curved. Hard parts are finely granulate, and with short clavate hairs.

Several specimens under bark; Lake Tahoe, Calif., July, (Hubbard). Differs from *Ch. pallipes* in shorter fingers, smaller size, etc. Related to *Ch. sanborni*, but with shorter and stouter fingers, a more elongate body, and a more swollen tibia.

Chelanops pallidus Bks.*Chernes pallidus* BANKS, Can. Entom., Aug., 1890.

I only know the type specimen from Ithaca, N. Y.

Chelanops affinis Bks.—Insect Life, May, 1894.

Crescent City, Florida, (Hubbard).

Sub-family GARYPINÆ.

Garypus Koch.

Three species of this well-marked genus are known to me from the United States. They may be tabulated as below:

1	{	Cephalothorax with lateral ridges and prolonged antero-lateral angles, trochantins not distinct	bicornis.
		Cephalothorax without lateral ridges or prolonged angles, posterior trochantins distinct	2
2	{	Claw very much darker than rest of palpus, large species	floridensis.
		Palpus all of one color, small species	granulatus.

Garypus bicornis, sp. nov.

Length, 2.5 mm. Brownish yellow, the cephalothorax and palpi darker than the other portions, a pale spot on the middle of the last two or three ventral seg-

ments. Cephalothorax narrow, somewhat triangular, much longer than broad, with a high elevated ridge each side, about parallel with the side margins, the space between the ridges concave in anterior portion, convex behind; the anterior margin of the elevated portion is rounded; each lower antero-lateral angle of the cephalothorax is prolonged into a conic tubercle, or horn, which is slightly longer than broad at base. There is a trace of the posterior suture, but the anterior one is very obscure; on each side there are two prominent eyes about their diameter apart, the posterior one on a tubercle and looking backward. The abdomen is broad and depressed, narrower at base than at posterior margin, broadest on the 6th segment, the segments plainly divided. Palpi long and slender; trochanter swollen on the posterior side, anterior margin nearly straight; femur short-pedicellate; cylindrical, much longer than cephalothorax; tibia gradually enlarged from base to near tip, about as broad and nearly one-half as long as the femur; neither margin much convex; claw as long as femur, hand about one and one-half times as broad as femur, nearly cylindrical, and about twice as long as broad; fingers much longer than hand, very slender and nearly straight. Legs about as usual, but no trochantins visible on the posterior hairs. All hard parts coarsely granulate; no hairs on palpi, except fine ones on fingers, a few thick ones on the legs with fine ones on tarsi.

This interesting species was found by Mr. Hubbard between the laminae of rocks at Specimen Ridge, Yellowstone National Park. Many were young and had formed little cases of silk and earth, in which to pass the moulting period. The structure of these young forms is not, however, different from that of the adult. This species might, on account of the structure of the cephalothorax and the absence of trochantins, form a new genus.

Garypus floridensis, sp. nov.

Length, 4 mm. Body pale brown, legs and palpi, except claw, pale brownish yellow, claw red-brown. Cephalothorax with mandibles triangular, longer than broad, very much narrowed in front, anterior margin emarginate and about one-fourth as long as posterior margin; sutures distinct; two eyes each side nearly touching, the posterior one looking backward. Abdomen depressed, much broader behind than in front, broadest on 7th segment, scutae short and quite broadly divided. Palpi moderately slender; trochanter swollen behind, convex in front; femur gradually enlarged from base to tip, slightly longer than the cephalothorax; tibia a little pedicellate, enlarged from base to near tip, about two-thirds as long as femur and a trifle broader, neither margin much convex; claw pedicellate, longer than femur, hand about as long and nearly twice as broad as tibia, somewhat cylindrical; fingers about as long as hand, and plainly curved. Hard parts finely granulate, and with short, fine, scattered hairs. Trochantins quite plain on posterior legs.

Several specimens of this large species were collected by Mr. Hubbard under drift-wood on the ocean beach, near St. Lucie River, Indian River, Florida, in April 1880.

Garypus granulatus Bks.—Can. Entom., Aug., 1891.

In the crevices of a cliff, Ithaca, N. Y.

Family OBISIIDÆ.

Sub-family OLPIINÆ.

Olpium *Koch.*

This genus and the next form the transition from the previous family to the true Obisiidæ.

Olpium obscurum *Bks.*—Can. Entom., March, 1893.

Besides the type, I have one specimen from Punta Gorda, Fla., (Mrs. Slosson).

Atemnus *Canesta.*

Differs from *Olpium* principally in lacking eyes, and in having the trochantins visible on all the legs.

Atemnus elongatus, sp. nov.

Length, 3 mm. Cephalothorax and legs yellowish, abdomen brownish, palpi red-brown. Cephalothorax smooth, one and one-half times as long as broad, narrowed in front, no trace of eyes; mandibles about one-third the length of cephalothorax, with a long slender, and simple stylet; abdomen not broader than cephalothorax and fully twice as long. Palpi heavy, but not long; trochanter swollen behind, convex in front; femur pedicellate, shorter than cephalothorax, about twice as long as broad, broadest near base; tibia about as long and as broad as femur, pedicellate, outer margin moderately, inner margin quite strongly convex; claw about as long as cephalothorax plus mandibles, much broader than tibia, broadest near base and tapering to the fingers, which are stout, curved, and plainly shorter than the hand. Legs short and stout, trochantins distinct on all pairs. Body and appendages with scattered simple hairs. One specimen with almost black cephalothorax and palpi does not differ otherwise from typical specimens.

Beaten from dead hickory wood in April, near St. Lucie Riv., Indian River, Florida, by Mr. Hubbard; also at Sand Point, and Enterprise, Florida, Punta Gorda, Fla., (Mrs. Slosson). A young specimen taken by myself at Runnymede, Fla., may belong to this species; the hand is more slender and the fingers longer, and there is a more prominent projection on the posterior margin of the trochanter.

Sub-family OBISINÆ.

Tribe IDEOBISINI.

Ideobisium *Balzan.*

Cephalothorax smooth, without transverse sutures, nearly as broad in front as behind, four distinct eyes; mandibles large, with a distinct stylet; abdomen moderately elongate, scutæ entire; palpi moderate, fingers curved; body with simple hairs. We have two species:

Cephalothorax about as broad as long **threveneti**.
 Cephalothorax distinctly longer than broad..... **rufulum**.

Ideobisium threveneti *Simon*.

Obisium threveneti SIMON, Ann. Soc. Ent. Fr., 1878.

Common on the Pacific Coast States. In moss and rotten wood, Portland and Astoria, Oreg., (Hubbard); Portland, Oregon, (Schwarz); Temino, Wash., (Hubbard); Olympia, Wash., (Kincaid); Simon had it from California.

Ideobisium rufulum *Bks.*

Olpium rufulum BANKS, Can. Entom., Aug., 1891.

Washington, D. C.; Fredricksburg, Va., (Richardson).

Ideoroncus *Balzan*.

Differs from the preceding genus in having but two eyes. The males which I have seen lack the stylet to the mandibles, a strange exception.

Ideoroncus obscurus *Bks.*—Can. Entom., March, 1893.

The specimens from which I described the species were not quite adult; adult ♀'s are often 4 mm. long and usually darker than described. It is common in the extreme West. Olympia, Wash., (Kincaid); Nat'l. Park, (Hubbard); Bear Paw Mts., Mont., (Hubbard); Assiniboine, Mont., (Hubbard); one specimen, Lake Tahoe, Calif., (Hubbard).

Tribe OBISINI.

Obisium *Ill.*

Our species of this genus may be separated as follows:

- | | | |
|---|-------------------------------------------------------------------------------------------------------------|-----------------------|
| 1 | { No eyes, cave form..... | cavicola . |
| | { Four eyes, not cave..... | 2 |
| 2 | { Tibia of palpus with the inner side first convex, then nearly straight,
fingers longer than hand | 3 |
| | { Tibia of palpus with inner side evenly convex..... | 4 |
| 3 | { Hand about twice as long as broad, large species | carolinensis . |
| | { Hand one and one-half times as long as broad, small species. | brunneum . |
| 4 | { Fingers very much longer than hand..... | macilentum . |
| | { Fingers a little shorter than hand..... | parvulum . |

Obisium cavicola *Pack.*—Am. Nat., Feb , 1884.

Unknown to me. Somewhat peculiar in the shape of the cephalothorax and in the form of the tibia of the palpus. New Market Cave, Va.

Obisium brunneum *Hagen*.—Record Am. Ent., 1868.

This is the common species in the northern states. It occurs under leaves in woods. Ithaca, N. Y.; Sea Cliff, L. I.; Salineville, Ohio, (A. D. MacGillivray); Poughkeepsie, N. Y., (G. Van Ingen); Cambridge, Mass., (Hubbard); Detroit, Mich., (Hubbard); and one specimen from Wasatch and Alta, Utah, (Hubbard), seems to be the same species.

Obisium parvulum, sp. nov.

Length, 1.6 mm. Cephalothorax and mandibles pale yellowish brown, palpi except fingers paler, abdomen sprinkled with silvery dots. Very similar to *O. brunneum* but the tibia of palpus is shorter, less pedicellate, broader and strongly and evenly convex on inner side; the claw is a little larger, the hand longer and the sides more nearly parallel; the fingers stouter and shorter, about equal to, or a little shorter than the hand.

One adult and several young, without locality (Hubbard). This was in the same vial as *Chelanops dentatus*, which I think must be from Florida.

Obisium macilentum *Simon*.—Ann. Soc. Ent. Fr., 1878.

South California (Curtis), one specimen.

Obisium carolinensis, sp. nov.

Length, 3 mm. Cephalothorax dark brownish, shining, abdomen brown, palpi red-brown, legs yellowish. Cephalothorax smooth, narrowed a little in front of eyes, a small median tooth on the anterior margin, the two eyes each side nearly touching. Abdomen but little broader than cephalothorax, two and one-fourth times as broad. Palpi moderately long; trochanter simple; femur longer than cephalothorax, about as broad as a mandible, nearly equally broad throughout; tibia pedicellate, as long as width of cephalothorax, little broader than the femur, and but slightly convex on inner side; claw about as long as cephalothorax plus mandibles, nearly twice as broad as tibia, broadest near base and tapering to the fingers, which are longer than hand, and curved. Body, legs and palpi with simple hairs; above on the superior finger two larger hairs near base and one near tip. Legs as usual.

Retreat, N. C., under leaves in woods; and Lee Co. Va., (H. G. Hubbard).

Blothrus *Schiodte*.

Readily separated from the preceding genus by its very long palpi. Most of the European species are from caves; the one from the United States is not known to be from a cave.

Blothrus californicus *Bks.*

Atemnus californicus BANKS, Can. Entom., Aug. 1891.

California (Dr. Cooper Curtice).

Tribe CHTHONINI.

Chthonius *Koch.*

The six species may be separated as follow :

1	{ Cave species, two or no eyes.....	2
	{ Not cave species, four eyes.....	3
2	{ Hind legs about twice as long as the abdomen.....	packardi.
	{ Hind legs not much longer than abdomen.....	cæcus.
3	{ Cephalothorax and mandibles with small spines, each tipped with a hair.....	spinosus.
	{ Without any spines.....	4
4	{ Eyes close together, almost touching.....	mæstus.
	{ Eyes distinctly separated.....	5
5	{ Hind eye about twice its diameter from front eye, cephalothorax much wider in front than behind.....	pennsylvanicus.
	{ Hind eye not twice its diameter from front eye, cephalothorax but little wider in front than behind.....	longipalpis.

Chthonius packardi *Hag.*—Zool. Anzeiger, July, 1879.

Indian Cave, Barren Co., Ky., (Hubbard); Mammoth Cave, Ky.; Wyandotte Cave, Ind.

Chthonius cæcus *Pack.*—Am. Nat., Febr. 1884.

Unknown to me. Weyer's Cave, Va.

Chthonius pennsylvanicus *Hag.*—Rec. Am. Ent., 1868.

Pa.; Poughkeepsie, N.Y., (G. Van Ingen); one specimen, Lake Poinsett, Fla., (Hubbard).

Chthonius longipalpus *Bks*—Can. Ent., Aug. 1891.

Ithaca, N.Y.; Sea Cliff, N.Y.; Washington, D.C.; Fredricksburgh, Va., (Richardson).

Chthonius mæstus *Bks.*—Can. Ent., Aug. 1891.

Ithaca, N. Y.

Chthonius spinosus *Bks.*—Can. Ent., March 1893.

Citrus Co., Fla., (C. M. Weed).

Lechyti *Balzan.*

Proposed by Prof. Balzan for his *Roncus chthoniiformis* with which my *Roncus pacificus* appears to be congeneric. The palpi are shorter than in *Chthonius*.

Lechyti pacifica *Bks.*

Roncus pacificus BANKS, Can. Entom., March, 1893.

Olympia, Washington, (Trevor Kincaid).